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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,463	12/04/2006	Alfred Siggel	H26856	9362

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EXAMINER	
KOSLOW, CAROL M	

ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
08/11/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/533,463	SIGGEL ET AL.	
	Examiner	Art Unit	
	C. Melissa Koslow	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/29/05;7/20/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

> The oath or declaration is defective because:
> It does not identify the city and either state or foreign country of residence of each inventor. The residence information may be provided on either an application data sheet or supplemental oath or declaration.

The oath only identifies the inventors' residence as Germany. The city of residence for each inventor is missing.

The disclosure is objected to because of the following informalities:

Page 7, line 5 refers to the claims. This is improper since the subject matter of the claims and he claim number may change during prosecution and thus any allowed claims may be different from the original claims referred to in the specification. Appropriate correction is required.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The subject matter of claim 11 is not found in the specification and there is no clear teaching in the specification that 1 to 4 of the alkyl groups are ethyl groups. The teaching of tetraethyl and methyltriethyl, which providing antecedent basis for claim 3 or 4 of the alkyl groups are ethyl does not provide proper antecedent basis for claiming 1 or 2 of the alkyl groups are ethyl.

Claim 2 is objected to because of the following informalities: The conjunction before "lactones" is missing. Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-6 and 8-12 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 5,418,682 or JP 2000-86671.

These references teach tetraalkyl ammonium tetrafluoroborate containing electrolytes, the method of producing the electrolyte and their use in capacitors and electrochemical cells.

The example in column 5 of U.S. patent 5,418,682 teaches producing trimethylbutyl ammonium tetrafluoroborate or trimethylpropyl ammonium tetrafluoroborate by mixing trimethylbutyl ammonium chloride or trimethylpropyl ammonium chloride with sodium tetrafluoroborate in methanol, an organic solvent which is completely miscible water, at about 55°C, separating the resulting sodium chloride and drying the trimethylbutyl ammonium tetrafluoroborate or trimethylpropyl ammonium tetrafluoroborate. The molar ratio of tetraalkyl ammonium chloride to sodium tetrafluoroborate is about 1:1.3, which falls within the claimed range. This is the claimed process and thus the resulting salts must inherently be non-corrosive in electrochemical cells and capacitors and have an sodium chloride content that falls withn the claimed range, absent any showing to the contrary. The patent teaches using the taught salt in capacitors, which means it teaches the capacitor of claim 12.

The translation of JP 2000-86671 teaches producing tetraalkyl ammonium tetrafluoroborate, where the alkyl groups contain independently from 1-4 carbon atoms

by mixing a tetraalkyl ammonium halide with sodium tetrafluoroborate in a lower aliphatic alcohol, such as methanol, ethanol or propanol, which are organic solvents which are completely miscible water, at a temperature in the range of 0-50°C, separating the resulting sodium halide and drying the tetraalkyl ammonium tetrafluoroborate. The molar ratio of tetraalkyl ammonium chloride to sodium tetrafluoroborate is about 1:1 to 1:1.5, which falls within the claimed range. This is the claimed process and thus the resulting salts must inherently be non-corrosive in electrochemical cells and capacitors, absent any showing to the contrary. The examples teaches a residual halide ion content, which would correspond to the residual sodium halide content, or 272ppm or 255 ppm. These values fall within the claimed ranges. The reference teaches using the taught salt in capacitors, which means it teaches the capacitor of claim 12. The references teach the claimed process, products and capacitors.

Claims 1, 3-6 and 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 10-87574.

The translation of JP 10-87574 teaches producing tetraalkyl ammonium tetrafluoroborate, where the alkyl groups contain independently from 1-5 carbon atoms by mixing a tetraalkyl ammonium halide with lithium tetrafluoroborate in a lower aliphatic alcohol, such as methanol, ethanol or propanol, which are organic solvents which are completely miscible water, at room temperature, separating the resulting lithium halide and drying the tetraalkyl ammonium tetrafluoroborate. The molar ratio of tetraalkyl ammonium halide to lithium tetrafluoroborate is 1;1 which falls within the claimed range. This is the claimed process and thus the resulting salt must inherently be non-corrosive in electrochemical cells and capacitors and have a lithium chloride content

that falls withn the claimed range, absent any showing to the contrary. The reference teaches the claimed process and product.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,852,229 in view of U.S. patent 6,853,472.

U.S. patent 6,852,229 teaches producing an quaternary ammonium tetrafluoroborate ionic liquid by mixing an quaternary ammonium halide with an alkali metal tetrafluoroborate in acetonitrile at room temperature, which falls within the claimed range, in a molar ratio of about 1:1, which falls within the claimed range. This patent does not specifically teach that the quaternary ammonium can be a tetraalkyl ammonium. U.S. patent 6,853,472 teaches in column 2, lines 40-67 that the quaternary ammonium cation in ionic liquid can be tetraalkylammonium, such as triethyl alkyl ammonium or tributyl alkyl ammonium, where the alkyl is one having 2-10 carbon atoms. Given this teaching, one of ordinary skill in the art would have found it obvious to form an tetraalkylammonium tetrafluoroborate ionic liquid by mixing an tetraalkyl ammonium halide with an alkali metal tetrafluoroborate in acetonitrile at room temperature, which falls within the claimed range, in a molar ratio of about 1:1, which falls within the claimed range; where the tetraalkyl is triethyl alkyl or tributyl alkyl. This is the claimed process and thus the resulting salt must inherently be non-corrosive in electrochemical cells and capacitors and have a alkali metal halide content that falls within the claimed

range, absent any showing to the contrary. The references suggest the claimed method and products.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/cmk/
August 12, 2008

/C. Melissa Koslow/
Primary Examiner
Art Unit 1793